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EXAMINER

DIVECHA, KAMAL B

ART UNIT	PAPER NUMBER
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2151

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12/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/985,709

Applicant(s)

WILSON, RICHARD A.

Examiner

KAMAL B. DIVECHA

Art Unit

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/12/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Action is in response to communications filed 10/12/07.

Claims 1-39, 44, 45, 53-58 are pending in this application.

Claims 40-43, 46-52 were previously cancelled.

Response to Arguments

Applicant's arguments filed October 12, 2007 have been fully considered but they are not persuasive.

In response filed, applicant argues in substance that:

a. In maintaining its rejection over Touboul, the Office Action asserts that Touboul “explicitly discloses a method for managing a multifunction device on a network”. See page 6 of the Office Action, and also page 24 in which it is asserted that “Touboul's system is limited to management of the multifunction network devices such as workstations”. Together, these portions of the Office Action signify that the PTO has incorrectly equated a multifunction device with an ordinary workstation. Indeed, as previously maintained, Touboul nowhere even mentions a “multifunction device”, and nowhere mentions anything even similar to the multifunction devices shown in representative embodiments of the invention (remarks, pg. 21-22).

In response to argument [a], Examiner respectfully disagrees.

Initially, applicant's disclosure is evident to suggest that “the multifunction device can be any type of network client that needs to dynamically load and/or unload functionality for performance reasons...” (See specification, pg. 1 lines 5-18).

In light of these teachings, one of ordinary skilled in the art would clearly interpret multifunction device to include any network device including the workstations of Touboul.

Furthermore, the previous rejection clearly indicated that Touboul's multifunction device is not an imaging processing apparatus comprising printer, scanner and faxing capabilities, See Office Action (OA) mailed 6/6/07, pg. 8.

Moreover, the office action cited NIWA to disclose multifunction network devices which are clearly multifunction network devices as in present claims.

Note: Applicant's note on pg. 21 of remarks on the common ownership is acknowledged. However, it's not sufficient to overcome the rejection. See MPEP 706.02(1)(1) and 706.02(1)(2)(II).

b. Touboul would still fail to describe that such a reconfiguration occurs in a case where there is a detection of a remote reconfiguration event. In this regard, the claims have been amended so as to emphasize that the reconfiguration event is triggered internally of a multifunction device by an increase or decrease in a demand for hardware resources thereof, and the reconfiguration event is detected over the network (remarks, pg. 22).

In response to argument [b], Examiner respectfully disagrees.

In support for the limitation above, applicant specification discloses:

Configurator module 59 then analyzes the service demands of each multifunction network device to determine if the demand for one functional service substantially outweighs the demand for other functional services, and if the received performance counters from the multifunction network device indicate that more capacity of the HDD, ROM, RAM and CPU are desirable for performing the one functional service in high demand. If so, configurator module 59 sends a reconfiguration command to the configuration module of the given multifunction network device instructing the multifunction network device to reconfigure itself by deleting the other functional services from its memory and CPU, thereby dedicating the HDD, ROM, RAM and CPU for exclusive use by the one functional service which is in high demand. In this manner, the particular multifunction network device has access to the

full capacities of its memories and CPU to more efficiently perform the one functional service which is currently in high demand by network users.

For example, configurator module 59 may detect a large number of print job requests being sent to multifunction network device 15, and may receive performance counters from configuration module 35 of multifunction network device 15 which indicate that the amount of HDD, RAM and CPU allocated for use by the printer engine functional module are limiting the ability of multifunction network device 15 to complete the print jobs in an efficient and timely manner. Accordingly, configurator module 59 sends a reconfiguration command to configuration module 35 of multifunction network device 15 which contains a "delete" command for multifunction network device to delete all functional modules from its HDD, ROM, RAM and CPU, and to reallocate all of these resources for exclusive use by printer engine functional module. Multifunction network device 15 can then complete the print jobs more quickly and efficiently by utilizing the full capacities of its HDD, ROM, RAM and CPU for printing only. Configurator module 59 also uses other conditions to send a reconfiguration command to one or more of the multifunction network devices, such as a reconfiguration request from the device itself or a prescheduled programmatic trigger. Each of these conditions are discussed more fully herein.

That is, the reconfiguration event is merely data generated/obtained/gathered by the configuration module 35 in the multifunction network device and is sent over the network to the management station.

Touboul discloses the process of generating the events and/or alerts internally by the agent 14 running within the workstation, and sending the event data to the management station via the network, as evidenced by the figure reproduced herein and col. 2 lines 20-56, col. 4 L5-52.

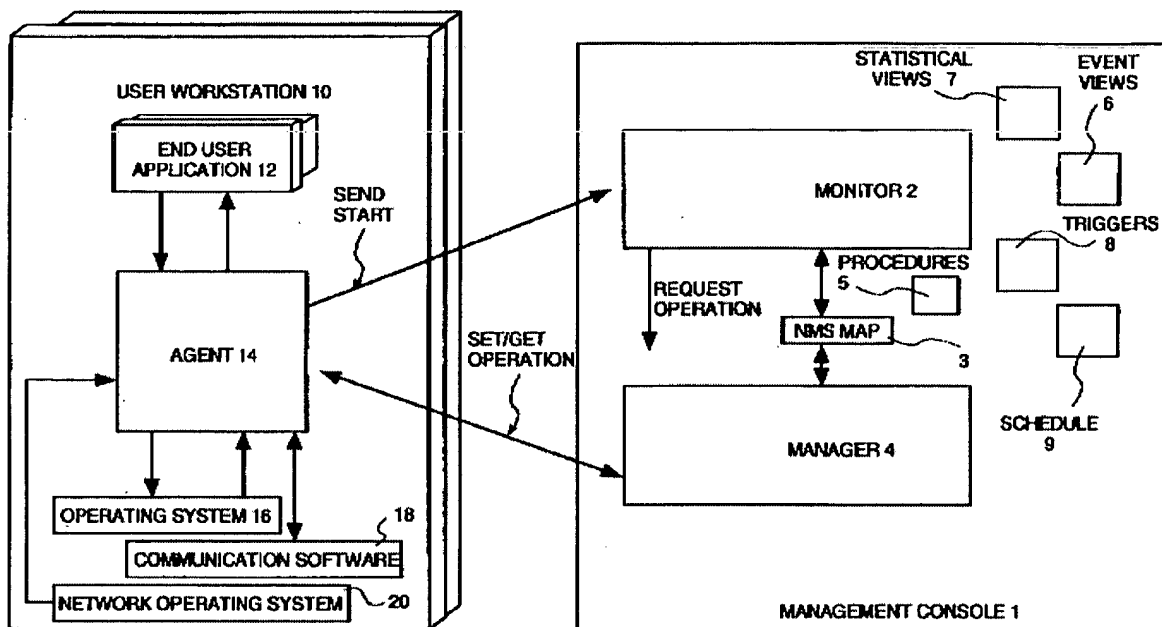


FIG. 1

As an example: Touboul further discloses sending an alert or event data in response to occurrence of an event such as “how many times too many files open” (i.e. performance counters to indicate an event) to the network management station, See col. 8 L27-53. This event data logically indicates the increased demand for the hardware resources.

Moreover, the agent 14 monitors the windows resource utilization, See col. 7 L10-37.

As such, Touboul does disclose a multifunction device, without the imaging processing capabilities, wherein the reconfiguration events are triggered within the device by an increase or decrease of the hardware resources, and wherein the reconfiguration event is detected over the network by sending the event data to the management station.

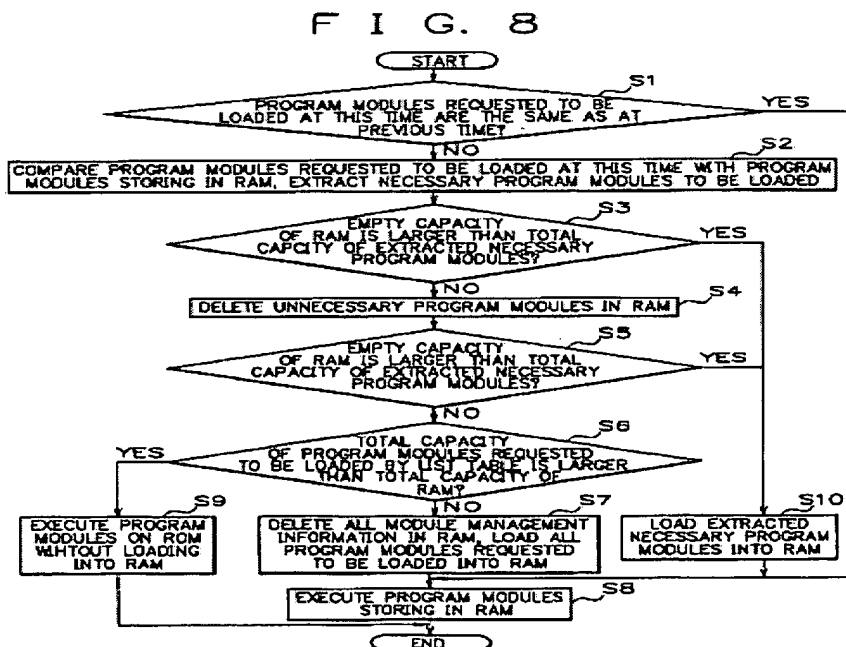
c. Hirai does not disclose, or suggest downloading over a network resource and deletion or download based on the network detection of a reconfiguration event that is triggered internally of a multifunction device by an increase or decrease in demand for hardware resources (remarks, pg. 22-23).

In response to argument [c], Examiner respectfully disagrees.

In addition to teachings above, Touboul explicitly discloses downloading files based on the network detection of a reconfiguration event that is triggered internally of a multifunction device, See col. 10 L41-57: copying files to the workstation in response to an event.

However, Touboul does not disclose deleting the resource by sending the command over the network.

Hirai discloses the process of sending a deletion (i.e. unloading) and/or download (i.e. loading) commands from a management program running on the external ROM, i.e. from the network, See fig. 5, col. 9 lines 56 to col. 10 lines 50, and figure 8 reproduced herein.



Logically, Hirai recognizes the problems associated with the memory such as RAM and ROM in a computer system, and solves the problem by reconfiguring the computer system by deleting unnecessary program modules and/or loading the necessary program modules from RAM and/or ROM based on the use of the hardware resources.

Therefore, Hirai does teach and disclose the features as in argument [c].

Applicant further submits on pg. 23 of remarks, "in this regard, attention is respectfully directed to claim language which defines "hardware resources" as "including a storage memory for...a program memory...and a processor...."

In response to applicant's submission above, it should be noted that the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

d. Applicant has previously traversed the office action's rationale for combining and/or modifying Touboul with NIWA and Hirai, but as far as can be determined, such traversal remains unanswered (remarks, pg. 23-24).

In response to argument [d], Examiner respectfully disagrees.

First, applicant has never traversed the office action's rationale for combining and/or modifying Touboul with NIWA and Hirai.

In response filed on 2/20/07 after the final office action on 10/17/06, applicant submitted arguments that were based on Touboul and NIWA (See response filed 2/20/07, pgs. 18-22).

In view of the continued examination (RCE) filed on 3/26/07, the office issued a non-final rejection, which clearly addressed applicant's arguments submitted on 2/20/07, See non-final action mailed on 6/6/07 pgs. 24-25, which shows the office's rationale and/or basis for obviousness.

As such, every single argument(s) and/or issues raised by the applicant has been clearly addressed and answered in the corresponding office actions. In this case, see Non-Final action mailed on 6/6/07, pgs. 24-25.

e. The office action's stated rationale incorrectly uses applicant's own disclosure (remarks, pg. 23-24: i.e. hindsight reasoning).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Furthermore, it is unclear where and how the office action relies on applicant's disclosure.

Applicant's argument of using applicant's own disclosure is based on the following disclosure in the office action (Non-Final, 6/6/07: pgs. 8-9):

"Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Hirai, and further in view of NIWA (the modification will be referred to as Touboul from herein on) in order to manage a network of plurality of multifunction network devices such as digital copiers, imaging devices, etc. *(Also note that the modification would have been fully compatible because applicant specification suggests that the applicant's invention can also be used to manage various other types of network devices, not just network printers, see specification, page 35)*".

The citation of applicant's specification was to indicate that the invention is not intended to be limiting towards the management of the multifunction network devices with image processing capabilities, but it can be applied to other types of network devices.

Other type of network devices in the art may include terminals, workstations, servers, laptops, etc.

This citation was intended to be a response to applicant's traversal of the rejection based on the Touboul and NIWA (See remarks filed 2/20/07, pgs. 19-22: arguments based on suggestion or motivation to combine Touboul and NIWA, field of endeavor, etc.).

That is, if applicant's invention can be used to manage various other types of network devices, why can't one of ordinary skilled in the art utilize the combination of Touboul and Hirai in order to manage multifunction network devices with image processing capabilities?

f. There is simply nothing in the cited art that provides the evidence to show that one of ordinary skilled in the art would have been prompted to modify and/or combine Touboul with Niwa and Hirai, in a manner that would have resulted in the invention (remarks, pg. 24-25).

In response to applicant's argument that there is no suggestion or evidence to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, one of ordinary skilled in the art would have been motivated to combine Touboul and Hirai because it would have improved the performance of the network devices and/or multifunction network devices, for example: See Hirai: col. 3 L25-35, col. 2 L21-32, and further one of ordinary skilled in the art would have been motivated to combine Touboul, Hirai

and NIWA because it would have offered increased flexibility in handling the problems that occur at the network devices, more specifically, at the multifunction network devices, for example: See Touboul: col. 1 L55-65.

Also, See MPEP 2141 (I), KSR International Co. v. Teleflex Inc. (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007): Principles of Law of obviousness.

Note: applicant's disclosure, by itself, is evident to show the obviousness, i.e. to show that why one of ordinary skilled in the art would have been prompted to modify Touboul and NIWA in manner that would have resulted in the present invention, for example: see specification pg. 35, wherein applicant discloses that the invention can be used to manage various other types of network devices.

g. In applicant's view, Obata is unrelated to management of multifunction devices over a network through monitoring of hardware resources on such devices (remarks, pg. 25).

In response to applicant's argument that Obata is unrelated art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In this case, it can be seen that Obata discloses a system for enabling a system down time due to a lack of ability to be avoided and enabling dynamic backup to be performed by properly allocating resources to a processing ability (See Abstract). In other words, Obata provides a

system for monitoring the system resources such as processors, memory segments, etc., and based on the monitoring, the system allocates and/or reallocates the system resources (fig. 2-5, 7-8).

As such, Obata is related to management of hardware resources, which is believed to be pertinent to the particular problem with which the applicant is concerned.

h. Applicant maintains his position that the office action has failed to articulate reasons as to why those of ordinary skill in the art would have been prompted to combine Niwa with Hirai and Obata (remarks, pg. 25).

In response to applicant's argument that there is no reasons or suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, one of ordinary skilled in the art would have been motivated because it would have enabled automatically fluctuating a processing capability of the system (Obata, pg. 1 [0009]) and further it would have improved the performance of the multifunction network devices by managing and utilizing the capacity of the program modules and the capacity of the program memory more efficiently (Hirai, col. 3 L25-35, col. 2 L21-32).

Also, see MPEP 2141 (I), KSR International Co. v. Teleflex Inc. (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007).

Therefore, the REJECTION IS MAINTAINED.

Claim Objections

Claim 1 is objected to because of the following informalities:

Claim 1 discloses “said one multifunction device” (1st limitation). Examiner presumes that the applicant intended to recite “said one multifunction network device”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The 35 U.S.C. 112, second paragraph rejections presented in the previous office action is withdrawn in light of claim amendments.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 55-56 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 55 recites:

An information processing apparatus which includes a network interface for connection to a network, a storage unit for storing a plurality of function modules and which is capable of communicating over the network with a plurality of multifunction network devices, comprising:
a detector...
instruction means...
sending means...

Initially, the claim fails to fall into any of the four enumerated category of the patentable statutory subject matter as set forth above for the at least following reasons:

Although the claim appears to be directed towards the physical apparatus, the claim actually lacks the necessary physical articles/objects/elements/components to constitute an apparatus, a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter.

Moreover, the specification is evidenced to disclose the detector (such as configurator module 59), the instruction means (for example, configurator module and the command) and the sending means to be provided as software components (See specification, pg. 14 L10-22, pg. 15 L22-30: software components for implementing the present invention, pg. 16 L28 to pg. 17 L7: figure 6 is a block diagram which depicts the interrelationships between the key software modules, pg. 17 L8 to pg. 18 L30).

Based on the broadest reasonable interpretation in light of the specification, it appears that these claims are claiming software. Since, the functional descriptive material (e.g. “means”), is not recited in conjunction with a physical structure (e.g. memory or hard disk), the claims may be directed to software *per se*, which is non-statutory.

As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se* and/or software *per se*.

[Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of

technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Merely claiming nonfunctional descriptive material, i.e., abstract ideas stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make the claim statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer”).]

See MPEP § 2106 (IV) for more on compliance with 35 U.S.C. 101.

Claim 56 is rejected for the same reasons as set forth in claim 55.

Note: A computer readable memory medium as in claims 57-58 includes, for example, hard disk (spec., pg. 12 lines 19-20, pg. 14 lines 10-15).

In response filed, see remarks pgs. 20-21, applicant submits that claim 55 positively recites a detector, instruction means and sending means, however, as noted above, these “means” are directed towards software *per se*.

As such, they are still deemed to be directed towards the non-statutory subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8, 10-11, 13, 17, 22-32, 35-36, 38, 39, 53, 55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touboul (U. S. Patent No. 6,125,390) in view of Hirai (US 6,546,484 B2), and further in view of NIWA et al. (hereinafter NIWA, US 2003/0037098 A1).

As per claim 1, Touboul explicitly discloses a method for managing a network device on a network, each network device having a network interface for communication on the network, and each network device further having a plurality of hardware resources including a storage memory for storing a plurality of function modules, a program memory for use by the function modules and a processor for executing each of the function modules (fig. 1: shows the network with plurality of network devices; fig. 2: shows one embodiment of a network device; and col. 6 L1-17), said method comprising the steps of:

- detecting a reconfiguration event for one of the plurality of network devices wherein the reconfiguration event is triggered internally of said one network device by an increase or a decrease in demand for hardware resources of said network device and wherein said reconfiguration event is detected over the network (fig. 1: agent 14 triggers the event internally and sends the event data over the network, col. 2 L40-56, col. 4 L30-56 and col. 7 L40-49);

- sending a reconfiguration command to the one network device from an information processing apparatus on the network to one of the plurality of network devices corresponding to the reconfiguration event in case that the reconfiguration event is detected in the detecting step in response to the increase demand for the hardware resources (col. 10 L30-40, col. 10 L40-48 and col. 15 L35-39) (col. 5 L11-13, col. 8 L10 to col. 9 L30: too many files open logically conveys the increased usage of the hardware resources, col. 9 L40 to col. 10 L1) and sending a second reconfiguration command to download, i.e. retrieve a software (i.e. function) module by sending the software module from the information processing apparatus to the multifunction network device via the network to one of the plurality of multifunction network devices corresponding to the reconfiguration event (col. 8 L10 to col. 9 L30);

reconfiguring one of the plurality of multifunction network devices by downloading the software module in the first reconfiguring step from the information processing apparatus on the network in accordance with the second reconfiguration command (col. 8 L10 to col. 9 L30: in this case downloading a file or software module).

However, Touboul does not disclose the process wherein the network devices are multifunction network devices having an image processing apparatus with scanning and printing capabilities controlled by function (software) modules and the process of sending a deletion command to delete at least one of the software modules, wherein the first reconfiguration command including the delete command is sent over the network and download command in order to download the software module in response to the increase/decrease of the demand for the hardware resources from the software modules and reconfiguring the multifunction device by deleting and downloading the software modules.

Hirai explicitly discloses the process of deleting and/or downloading the software modules based on the usage of the hardware resources, wherein the commands are sent over the network from the management program running on the external ROM, i.e. network (fig. 5, fig. 8, fig. 12, col. 3 L36 to col. 4 L65, col. 7 L20-33: deleting unnecessary program files and/or downloading only the specific software module, col. 9 L56 to col. 10 L64: management program on the external ROM).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view in view of Hirai in order to delete the software modules based on the usage of the hardware resources of the network device.

One of ordinary skilled in the art would have been motivated because it would have improved the performance of the multifunction network device by managing and utilizing the capacity of the program modules and the capacity of the program memory more efficiently (Hirai, col. 3 L25-35, col. 2 L21-32).

However, Touboul in view of Hirai does not disclose the process wherein the network device is an imaging processing apparatus with scanning and printing capabilities (i.e. applicant specification defines a multifunction network as a combination of fax/scanner/printer, see pg. 1 lines 5-16).

NIWA explicitly discloses a multifunction network device, more specifically an imaging device (the combination of fax/scanner/printer) having plurality of hardware resources including a storage memory for storing a plurality of function modules (i.e. programs), which includes a function module for controlling a printer (i.e. a print software or driver) and a function module for controlling a scanner (i.e. s scanning software, program or driver), a program memory and a

processor (fig. 1 item #1, 4, 5, 17, 18, 19, fig. 3 item #4) and the process of requesting to download a specific software, i.e. a printer software module, a scanning software module, based on the usage demand (pg. 1 [0006], pg. 3 [0048-0051], pg. 11 [0156-0157]).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Hirai, and further in view of NIWA (the modification will be referred to as Touboul from herein on) in order to manage a network of plurality of multifunction network devices such as digital copiers, imaging devices, etc.

One of ordinary skilled in the art would have been motivated because it would have offered increased flexibility in handling of problems that occur at the network devices (Touboul, col. 1 L55-65).

As per claim 2, Touboul discloses the process wherein the reconfiguration event is a request for execution of one of the plurality of function modules by the one multifunction network device (col. 2 L20-45, col. 6 L54-61, col. 8 L43-52).

As per claim 3, Touboul discloses the process wherein the reconfiguration event is a trigger set by a configurator module executing in a computing device on the network (col. 2 L20-65, col. 4 L30-55, col. 5 L1-28, col. 10 L58 to col. 11 L20).

As per claim 4, Touboul discloses the process wherein the trigger is set in response to detection by the configurator module of an increased demand for use of the storage memory and of the program memory in the one multifunction network device (col. 8 L27 to col. 9 L67: too many files open indicates the increased demand for the memory).

As per claim 8, Touboul discloses the process wherein the trigger is set by the configuration module based on receipt of a request message by the configuration module from the one multifunction network device (col. 8 L44 to col. 9 L67, fig. 1 and col. 7 L40-49).

As per claim 10, Touboul discloses the process wherein the request message is passed in an SNMP message from the one multifunction network device to the configuration module (fig. 1, fig. 12 and col. 10 L19-29).

As per claim 11, Touboul discloses the process of monitoring an overall demand for execution of each of the plurality of functions by the plurality of multifunction network devices, and the trigger is set by the configuration module based on a detected increase in the overall demand for execution of one of the plurality of functions (col. 7 L40-50 and col. 8 L10 to col. 9 L67).

As per claim 13, Touboul discloses the process wherein the one multifunction network device is reconfigured in accordance with the reconfiguration command by deleting at least one of the function modules from the storage memory (col. 15 L25-39: please note that the process of updating inherently deletes a file).

As per claim 17, Touboul discloses the process wherein the reconfiguration command is selected from an addition command to add a designated function module to the storage memory and the program memory of the one multifunction network device (col. 8 L27 to col. 9 L67).

As per claim 22, Touboul discloses the process wherein the reconfiguration event is a trigger set by configuration module executing in a server on the network, and the trigger is based on an expiration of a predetermined time duration which was initiated at a last reconfiguration

event for the one multifunction device (col. 7 L40 to col. 8 L64 and fig. 1 item #1, col. 8 L10-26).

As per claim 23, Touboul discloses the process wherein the reconfiguration event is a trigger set by a configuration module executing in a server on the network (fig. 1 item #1, fig. 5), and the trigger is based on receipt of a request message by the configuration module from the one multifunction network device (col. 8 L44 to col. 9 L67 and col. 7 L40-49).

As per claim 24, Touboul discloses the process wherein the request message comprises a request by the one multifunction network device for the addition of at least one function module to the storage memory and to the program memory in the one multifunction network device (col. 7 L40-49 and col. 8 L44 to col. 9 L67: please note the process of installing and downloading is same as the process of adding the function modules).

As per claim 25, Touboul discloses the process wherein the reconfiguration event is a trigger set by configuration module executing in a server on the network (col. 14 L56-60 and fig. 1 item #1, 8), and the trigger is based on discovery by the configuration module of the one multifunction network device (col. 12 L22-35 and fig. 5).

As per claim 27, Touboul discloses the process wherein, in case that the reconfiguration command is an addition command to add a designated function module to the storage memory and the program memory of the one multifunction network device, the designated function module is downloaded to the one multifunction network device (col. 8 L10 to col. 9 L67 and col. 10 L40-49).

As per claim 28, Touboul discloses the process wherein the designated function module is downloaded to the one multifunction network device from a component repository module in response to an instruction from a configuration module (col. 10 L40-49 and col. 15 L9-20).

As per claim 29, Touboul discloses the process wherein the component repository module and the configuration module are executing on a same computing device on the network (fig. 5 item #74, 76, 78 and item #84, fig. 1 #1 and fig. 2, col. 15 L3-20).

As per claim 30, Touboul discloses a system wherein the component repository module and configuration module are executing on separate respective devices on the network (fig. 1 to fig. 3 and fig. 12).

As per claim 31, Touboul discloses the process wherein the component repository module executes in a server on the network (fig. 5 item #74, 76, 78 and col. 15 L10-20 and fig. 1).

As per claim 32, Touboul discloses the process wherein version identification (an identification) of the designated function module is provided in the instruction from the configuration module to the component repository module (col. 10 L40-49: the process inherently identifies the files or drivers using identifier and downloads and/or copies them).

As per claim 35, Touboul discloses the process wherein the designated function module is downloaded to the one multifunction network device from a component repository module in response to an instruction from the one multifunction network device (col. 10 L40-49, col. 9 L15-67 and col. 7 L40-49).

As per claim 36, Touboul discloses the process wherein a version identification of the designated function module is provided in the instruction from the one multifunction network device to the component repository module (col. 7 L40-49).

As per claim 38, Touboul discloses the process wherein the reconfiguration command is sent internally within the one multifunction network device which is reconfigured in accordance with the reconfiguration command (col. 5 L42-53).

However Touboul does not disclose the command of deleting all of the function modules except one designated function module from the storage and program memory.

Hirai discloses the process of program module management. Hirai further teaches the process of deleting all of the program modules (functional modules) except for the designated function module from the program memory of the network device (col. 4 L18-36, L46-65, col. 6 L23-49, col. 7 L20-33, col. 7 L56 to col. 8 L22).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Burgess, and further in view of Hirai, in order to include a command to delete all of the function modules except for the designated function module from the storage memory and program memory of the multifunction network device, since Hirai teaches the process of deleting all of the program modules except for the program modules stationed permanently.

One of ordinary skilled in the art would have been motivated because it would have improved the performance of the multifunction network device by managing and utilizing the capacity of the program modules and the capacity of the program memory more efficiently (Hirai, col. 3 L25-35, col. 2 L21-32).

As per claim 39, neither of the references disclose the process wherein the deleted function modules are sent from the multifunction network device to a component repository on the network, and wherein the deleted function modules are subsequently retrieved by multifunction network device from the component repository and added to the storage memory and to the program memory, But the process of deleting, sending, retrieving and adding function modules are well known and obvious in the relevant art. Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Burgess and Hirai, in order to retrieve the deleted functional modules from the repository and add to the storage memory and to the program memory. One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 38.

As per claims 14, 26, 53, 55 and 57, they do not teach or further define over the limitations in claims 1-4, 8, 10-11, 13, 17, 22-25, 27-32, 35-36 and 38-39. Therefore claims 14 and 26 are rejected for the same reasons as set forth in claims 1-4, 8, 10-11, 13, 17, 22-25, 27-32, 35-36 and 38-39.

3. Claims 5-7, 9, 12, 15-16, 18-21, 37 and 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touboul (U. S. Patent No. 6,125,390) in view of Hirai (US 6,546,484 B2), further in view of NIWA et al. (hereinafter NIWA, US 2003/0037098 A1), and further in view of Burgess et al. (hereinafter Burgess, U. S. Patent No. 5,696,701).

As per claim 5, Touboul does not disclose the process wherein the detection by the configuration module of an increased demand for use of the storage memory and of the program memory is based on resource information data which is passed from the one multifunction network device to the configuration module.

Burgess, from the same field of endeavor discloses the process of detecting high usage of the storage memory and program memory based on resource information data passed from a monitored computer (a network device) to the configurator module (col. 5 L1-51, col. 9 L55-65).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Burgess as stated above with Touboul in order to detect of an increased demand for use of the memory which is based on resource information data from the monitored computer.

One of ordinary skilled in the art would have been motivated because monitoring of this performance information would have allowed a network administrator to take action before the halt of the operating system of the monitored computer, i.e. halt of the computer system (Burgess, col. 8 L3-11).

As per claim 6, Touboul does not disclose the process wherein the resource information data includes a current utilized amount of the storage memory and a current utilized amount of the program memory of the one multifunction network device.

Burgess discloses the process wherein the resource information data includes a current utilized amount of the storage memory and a current amount of the program memory of the monitored computer (col. 7 L4-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Burgess as stated above with Touboul in order to pass the utilized amount of the memory.

One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 5.

As per claim 7, Touboul discloses the process wherein the resource information data is passed in an SNMP message from the one multifunction network device to the configuration module (fig. 1, fig. 9 item #174 and col. 10 L19-29, col. 2 L30-56).

As per claim 9, Touboul does not disclose the process wherein the request message comprises a request by multifunction network device for an increased useable capacity of the storage memory and of the program memory in the multifunction device.

Burgess discloses the process of sending a message by the monitored computer for an increased useable capacity of the storage device and of the program memory in the monitored computer (col. 6 L40 to col. 7 L67 and col. 8 L56-65).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Burgess as stated above with Touboul in order to send a request message for an increased useable capacity of the storage memory and of the program memory in the computer.

One of ordinary skilled in the art would have been motivated because it would have provided a mechanism for accommodating the operating system demands (Burgess, col. 7 L37-47).

As per claim 12, Touboul does not explicitly disclose the process wherein the configuration module monitors the overall demand for execution of each of the plurality of functions by monitoring a plurality of function request messages which are sent to the plurality of multifunction devices.

Burgess discloses the process of monitoring the percentage of time that a processor is busy executing a request, the rate at which the operating system switches between threads and the number of times that the operating system is not able to assign a work item to service a request (col. 7 L13-65). That Burgess monitors the plurality of requests and generates the alerts based on the monitoring process.

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Burgess in order to monitor plurality of function request messages.

One of ordinary skilled in the art would have been motivated because of the same reasons as asset forth in claims 5 and 9.

As per claim 15, Touboul does not disclose the process wherein the multifunction network device is reconfigured in accordance by allocating a designated amount of program memory for use by the function modules.

Burgess, from the same field of endeavor, discloses the process of increasing the program memory for use by the program modules (i.e. it increases by reallocating memory from somewhere to the device, col. 7 L37-47).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Burgess as stated above with Touboul, in order to reallocate the program memory for use by the network device.

One of ordinary skilled in the art would have been motivated because of the same reasons as asset forth in claims 5 and 9.

As per claim 16, Touboul does not explicitly disclose the process wherein multifunction network device is reconfigured in accordance with the reconfiguration command by instructing an operating system in the one multifunction network device to respond only to a function request message which requests execution of a designated function module.

Burgess discloses the process of instructing an operating system to provide more work items to service requests when operating system is not able to assign a work item (col. 7 L60 to col. 8 L2).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Burgess to instruct operating system to respond only to a designated function request, since Burgess discloses the process of instructing the operating system to perform a task.

One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 5 and 9.

As per claim 44, Touboul does not explicitly disclose the process wherein one multifunction network device is reconfigured in accordance with the reconfiguration command by prohibiting the use of program memory for at least one the function module.

Burgess discloses the process wherein a monitored computer (a multifunction network device) is instructed to cease executing extraneous processes (read as prohibiting the use of program memory, col. 7 L49-60).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Burgess as stated above with Touboul in order to prohibit the use of program memory.

One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 5 and 9.

As per claim 45, Touboul does not explicitly disclose the process wherein one multifunction network device is reconfigured in accordance with the reconfiguration command by prohibiting the use of program memory for all of the function modules except a designated function module.

Burgess discloses the process wherein a monitored computer (a multifunction network device) is instructed to cease executing extraneous processes (read as prohibiting the use of program memory, col. 7 L49-60).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Burgess in order to prohibit the use of program memory for all of the function modules except a designated function module.

One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 44.

As per claims 18-21, 37 and 41-43, they do not teach or further define over the limitations in claims 5-7, 9, 12, 15-16 and 44-45. Therefore claims 18-21, 37 and 41-43 are rejected for the same reasons as set forth in claims 5-7, 9, 12, 15-16 and 44-45.

4. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touboul (U. S. Patent No. 6,125,390) in view of Hirai (US 6,546,484 B2), further in view of NIWA et al. (hereinafter NIWA, US 2003/0037098 A1), and further in view of Chiles et al (hereinafter Chiles, U. S. Patent No. 6,167,567).

As per claim 33, Touboul's teachings as set forth above still applied. Touboul further discloses a configuration profile that includes attributes such as type of machine, processor type, memory size, etc., associated with a workstation (i.e. preset profile associated with a multifunction device).

However Touboul does not disclose the process wherein the version identification is determined in accordance with a preset profile corresponding to the one multifunction device.

Chiles discloses a system for automatically updating software on a computer in a networked client-server environment (see summary) and Chiles further discloses the process of identifying the updates based on the version numbers of the software (col. 2 L42-56, col. 5 L44-50).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Chiles, in order to include a version numbers of software associated with multifunction device in a configuration file or profile.

One of ordinary skilled in the art would have been motivated because it would have identified the software. It would have also enabled a determination process that would have determined whether the software and/or functional module needs an update or not (Chiles, col. 4 L43-47).

As per claim 34, Touboul discloses the process wherein preset profile corresponding to one network device contains information regarding allowed function modules that can be downloaded to the one multifunction device (col. 15 L3-39).

However Touboul does not disclose the process wherein the preset profiles includes version identification for each of the allowed function modules.

Chiles discloses a system for automatically updating software on a computer in a networked client-server environment (see summary) and Chiles further discloses the process of identifying the updates based on the version numbers of the software (col. 2 L42-56, col. 5 L44-50).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Touboul in view of Chiles, in order to include a version numbers of software associated with multifunction device in a configuration file or profile.

One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 33.

5. Claims 54, 56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over NIWA et al. (hereinafter NIWA, US 2003/0037098 A1) in view of Obata (US 2001/0025312 A1), and further in view of Hirai (US 6,546,484 B2).

As per claim 54, NIWA explicitly discloses a method for managing/controlling a multifunction network device on a network, wherein the multifunction network device (MFD) includes a network interface for communication on the network, and each multifunction network device further having an image processing apparatus with scanning and printing capabilities controlled by function modules and each MFD having a plurality of hardware resources including a storage memory for storing a plurality of function modules, a program memory to be used by the function modules and a processor for executing the function modules (fig. 1: an imaging device), said method comprising the steps of:

first reconfiguring the multifunction network devices by downloading, i.e. retrieving the software module from the information processing apparatus, i.e. host computer on the network (i.e. retrieving the requested program file, (fig. 1 item #1, 4, 5, 17, 18, 19, fig. 3 item #4) and the process of requesting to download a specific software, i.e. a printer software module, a scanning software module, based on the usage demand (pg. 1 [0006], pg. 3 [0048-0051], pg. 11 [0156-0157]).

However, NIWA does not disclose the process of determining whether the hardware resources need to be reallocated based on a status of the hardware resources by the plurality of software modules and the process of deleting at least one software modules and sending the software module over the network so as to secure hard resources in the multifunction network

devices to an information processing apparatus on the network when the determining step determines that the hardware resources need to be reallocated.

Obata explicitly discloses the process of monitoring whether the hardware resources need to be allocated and/or reallocated based on the status of use of the hardware resources by the plurality of software modules (fig. 2-4, fig. 6, fig. 9, pg. 1 [0005-0010]).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify NIWA in view of Obata in order determine whether the hardware resources need to be reallocated.

One of ordinary skilled in the art would have been motivated because it would have enabled automatically fluctuating a processing capability of the system (Obata, pg. 1 [0009]).

However, NIWA in view of Obata does not disclose the process of deleting at least one software modules and sending the software module (i.e. function module) over the network so as to secure hard resources in the multifunction network devices to an information processing apparatus on the network when the determining step determines that the hardware resources need to be reallocated.

Hirai explicitly discloses the process of deleting and/or downloading the software modules based on the usage of the hardware resources over the network (fig. 8, fig. 12, col. 3 L36 to col. 4 L65, col. 7 L20-33: deleting unnecessary program files and/or downloading only the specific software module, note that deleting the file involves removing the software files and storing them into temporary storage, fig. 5, col. 9 L56 to col. 10 L60: management program running on external ROM).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify NIWA in view of Obata and further in view Hirai in order to delete the software modules based on the usage of the hardware resources of the network device and in response to determining whether the hardware resources need to be reallocated.

One of ordinary skilled in the art would have been motivated because it would have improved the performance of the multifunction network device by managing and utilizing the capacity of the program modules and the capacity of the program memory more efficiently (Hirai, col. 3 L25-35, col. 2 L21-32).

As per claims 56 and 58, they do not teach or further define over the limitations in claim 54. Therefore claims 56 and 58 are rejected for the same reasons as set forth in claim 54.

Additional References

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Sato, US 2003/0033395 A1: Peripheral Device with a centralized management server and system.
- b. Schacht et al., US 2003/0051011 A1: System and Method for installing printer driver software.

Examiner's Remarks

Touboul discloses the process and apparatus for monitoring and managing the network devices and/or resource utilization, however Touboul's system is limited to management of the multifunction network devices such as workstations.

Hirai explicitly discloses deleting and loading the software modules in response to the memory usage of a network device.

Logically, the combination of Touboul and Hirai discloses the invention as in the present application; however the combination is limited to management of the network devices such as workstations.

But, applying these teachings to a networked system comprising plurality of multifunction network devices, i.e. imaging devices, would be considered obvious because network of plurality of MFPS or imaging devices are well known in the art, as evidenced in NIWA.

And, one of ordinary skilled in the art would have been motivated because it would have offered increased flexibility in handling of problems that occur at the multifunction network device and/or network devices due to various reasons (Touboul, col. 1 L55-65).

Conclusion

The teachings of the prior art should not be restricted and/or limited to the citations by columns and line numbers, as specified in the rejection. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from

the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner, in order to move prosecution forward.

In the case of amendments, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and support, for ascertaining the metes and bounds of the claimed invention.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is 571-272-5863. The examiner can normally be reached on Increased Flex Work Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Kamal Divecha/

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Art Unit 2151

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